



THE PORT AUTHORITY
OF NY & NJ



ORIGINAL SIGNED & SEALED BY
N.Y. P.E. (OR R.A.)

**Joseph R. Loring
& Associates, Inc.**
consulting engineers
One Pennsylvania Plaza
New York, New York 10009-0045
Tel: (212) 563-7400, Fax: (212) 563-7382

THE OFFICE OF
**DWID
ELLIOT
LEONOWITZ**
P.E.
ARCHITECTS & PLANNERS
15 WEST 44TH STREET, NEW YORK, NY 10018
TEL: (212) 693-7000 FAX: (212) 693-7000

**LESLIE E. ROBERTSON
ASSOCIATES, R.L.L.P.**
CONSULTING STRUCTURAL ENGINEERS
20 EAST 40TH STREET
NEW YORK, NY 10018
TEL: (212) 693-7000 FAX: (212) 693-7000

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT
COPY OF ONE OF THE CONTRACT DRAWINGS CON-
STITUTING A PART OF CONTRACT NO. **WTC-945-071**
IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT
THE TIME THE SAID CONTRACT WAS EXECUTED BY
THE PARTIES.
DATE **11/16/98** **Enthou A. Aslan**
DATE **4/18/98** **F.L. Aslan**
SUPERVISOR OF DESIGN

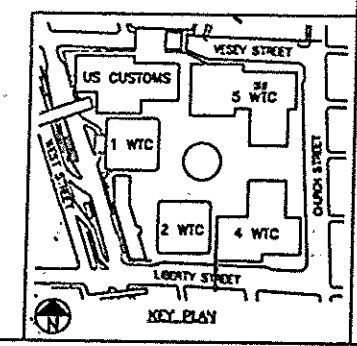
No.	Date	Revision	Approved
1	12/12/97	ADD SLAB OPENING AND SEC F-F	
2	11/17/97	ISSUED FOR BID	
Engineering Department			
Design Divisions			
The World Trade Center			

STANDBY POWER
5 WORLD TRADE CENTER
STRUCTURAL
5 WTC FUEL OIL SYS
FUEL OIL TANK
PART PLANS

This drawing subject to conditions in contract.
All inventions, ideas, designs and methods
herein are reserved to Port Authority and
may not be used without its written consent.

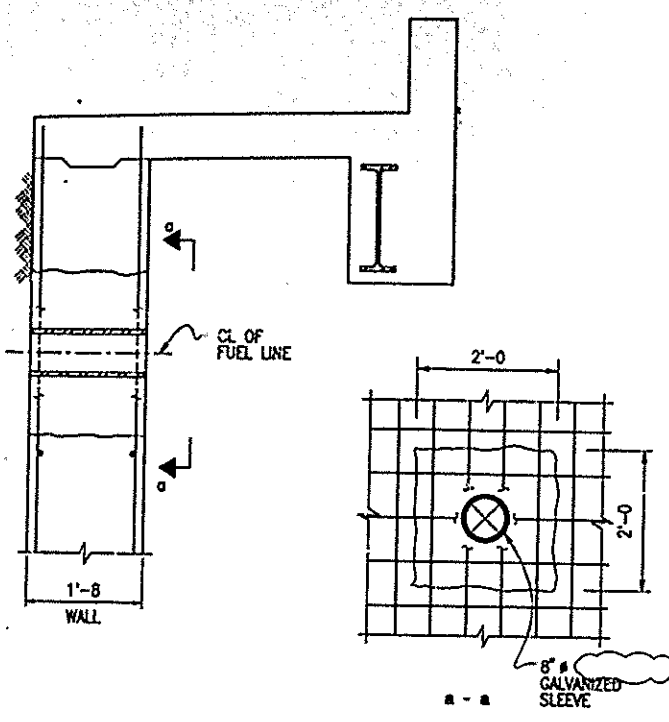
DESIGNED BY: **BAZ, CAF** DRAWN BY: **RZ** CHECKED BY: **RZ**

Date: **11/17/97** Scale: **AS NOTED**
Contract Number: **WTC-945-071** Drawing Number: **S3-01**



PLAN NOTES:

- EXISTING FRAMING IS SHOWN FASCD.
- TOP OF CONCRETE IS INDICATED THUS **XXX**.
- FUEL OIL TANK ROOM ROOF CONSTRUCTION IS 4'-1/2" LIGHTWEIGHT CONCRETE (FC=4000 PSI) OVER 2" COMPOSITE STEEL DECK, TYPE D2, U.O.N.
- TOP OF STRUCTURAL STEEL AT FUEL OIL TANK ROOM ROOF IS (-6'-1/2") BELOW TOP OF CONCRETE.
- STEEL DECK AT FUEL OIL TANK ROOM ROOF IS 19 GAGE MINIMUM. STEEL DECK SPANS EAST/WEST.
- DIMENSIONS WITH + NEED BE VERIFIED AND ADJUSTED AS NEEDED ONCE ACTUAL EQUIPMENT IS SELECTED.

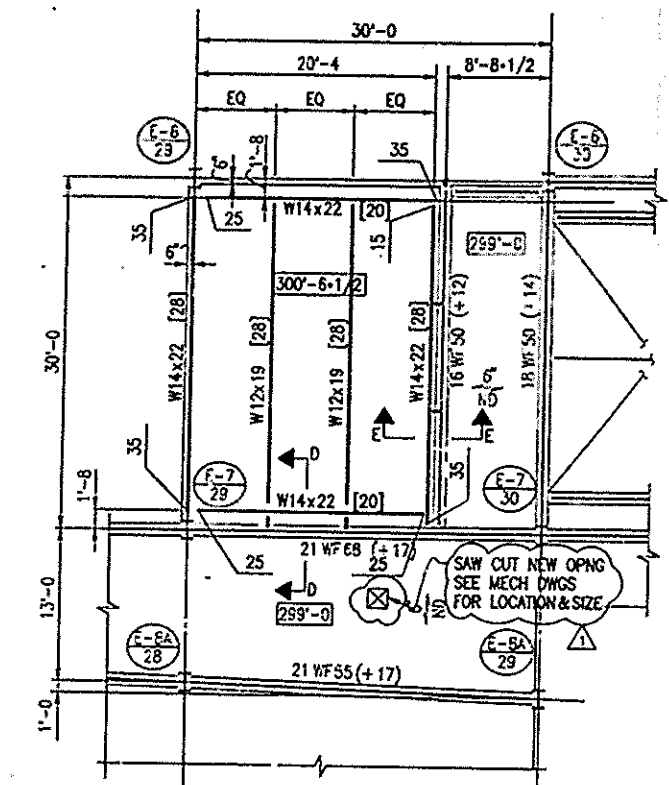


SEQUENCE FOR INSTALLATION OF 8" SLEEVE

- CHP CONCRETE (2'-0"x2'-0"). DO NOT DAMAGE EXISTING REBAR.
- LOCATE 8" SLEEVE TO MINIMIZE THE NUMBER OF REBAR INTERRUPTED BY SLEEVE. CUT INTERRUPTED REBAR.
- BACKFILL AROUND SLEEVE WITH FC=4000 PSI CONCRETE PER THE FOLLOWING SEQUENCE:
 - ROUGHEN THE CONCRETE SURFACE;
 - CLEAN THOROUGHLY, REMOVE LAITANCE;
 - APPLY EPOXY BONDING COMPOUND IMMEDIATELY BEFORE PLACEMENT OF CONCRETE ACCORDING TO MANUFACTURER'S INSTRUCTIONS; AND
 - POUR CONCRETE.

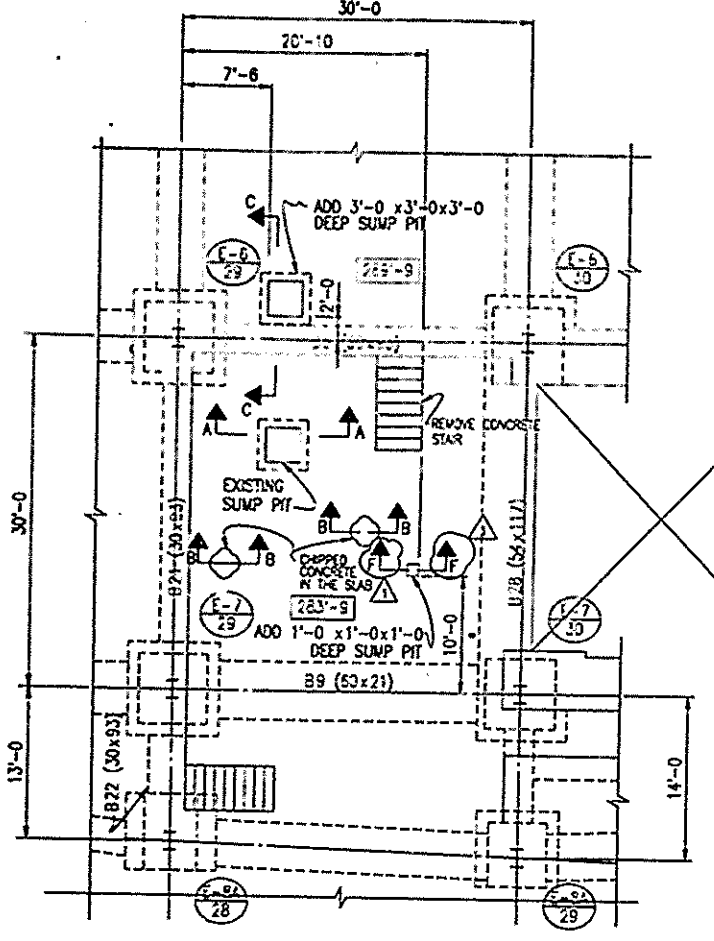
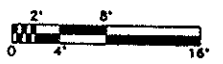
TYPICAL DETAIL FOR FOUNDATION WALL PENETRATION FOR FUEL LINE

NTS



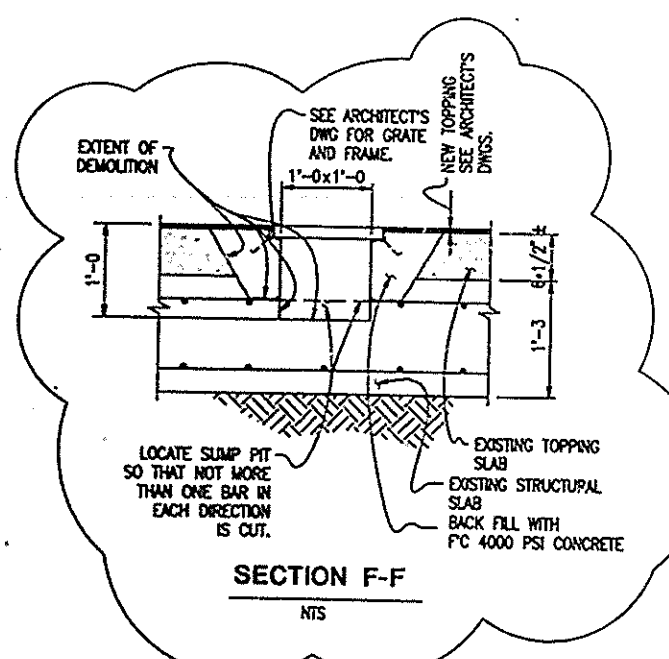
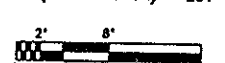
FUEL OIL TANK ROOM ROOF PLAN

REF EL (TOP OF CONCRETE) = 300'-6-1/2"



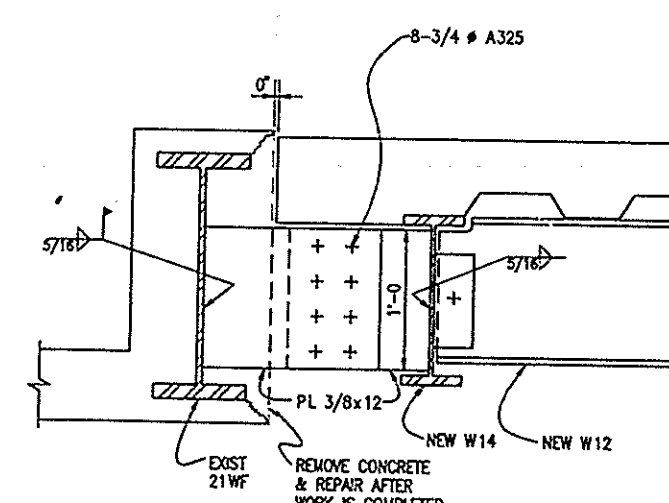
FUEL OIL TANK ROOM PLAN

REF EL (TOP OF FINISH) = 284'-0"



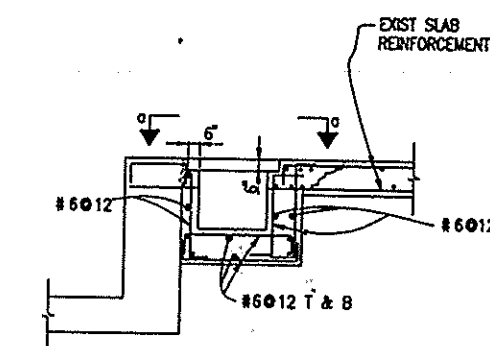
SECTION F-F

NTS



SECTION D-D

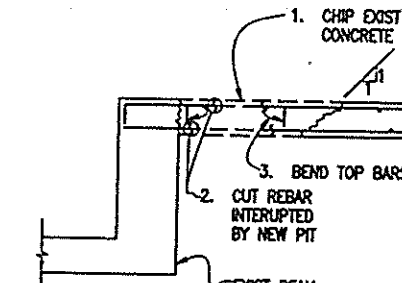
NTS



SECTION C-C

NEW PIT CONSTRUCTION

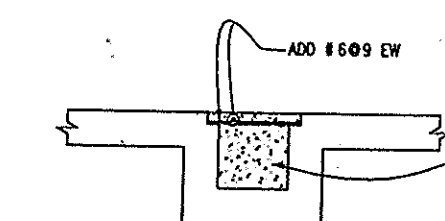
NTS



SECTION C-C

CONCRETE REMOVAL

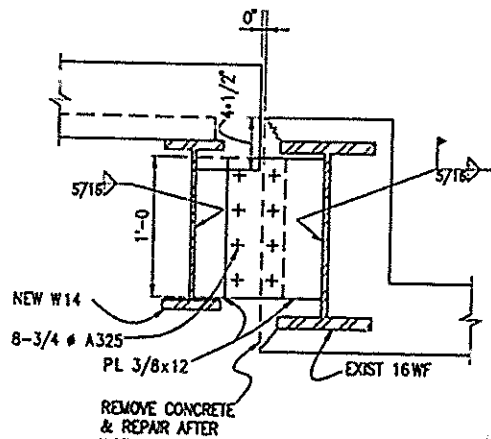
NTS



SECTION A-A

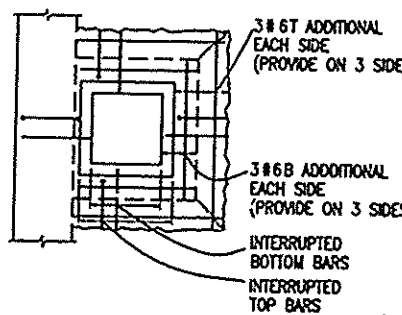
NTS

- FILL WITH FC=4000 PSI CONCRETE PER THE FOLLOWING SEQUENCE:
- ROUGHEN THE CONCRETE SURFACE.
 - CLEAN THOROUGHLY, REMOVE LAITANCE.
 - APPLY EPOXY BONDING COMPOUND IMMEDIATELY BEFORE PLACEMENT OF CONCRETE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
 - POUR CONCRETE.



SECTION E-E

NTS



SECTION B-B

NTS

FILL WITH FC=4000 PSI CONCRETE FOLLOWING THE SAME SEQUENCE INDICATED IN SECTION A-A